

REMARKS

This Amendment is in response to the Final Office Action mailed March 17, 2008. Claims 1, 3-8, 10, 12-17, 19-21, 23, 25-28, 30, and 32-34 are pending. In this response claims 1, 3, 10, 12, 19, and 20 have been amended. No claims have been added or canceled. Thus, claims 1, 3-8, 10, 12-17, 19-21, 23, 25-28, 30, and 32-34 remain pending. Reconsideration in light of the amendments and remarks made herein is respectfully requested.

Rejection Under 35 U.S.C. § 101

The Examiner rejects claim 19 under 35 U.S.C. § 101 as being directed to non-statutory subject matter. As stated by the Examiner, the claimed article of manufacture may include instructions printed on paper which would render the article non-functional and thus non-statutory under § 101. In order to clarify what the applicants regard as their invention, Applicants have amended claim 19 to recite a “computer readable medium” with instructions stored thereon. In light of the amendments, applicants respectfully submit that the rejection of claim 22 has been overcome, and request withdrawal of the rejection.

Rejection Under 35 U.S.C. § 103

The Examiner rejects claims 1, 3-8, 10, 12-17, 19-21, 23, 25-28, 30, and 32-34 under 35 U.S.C. § 103(a) as being unpatentable over Christopoulos et al. (US Patent Publication 2001/0047517) (hereafter referred to as “Christopoulos”), in view of ISO/IEC JTC 1/SC 29/WG 1 N1646 (“JPEG 2000 Image coding system,” ISO/IEC JTC 1/SC

29/WG 1. JPEG 2000, 16 March 2000 cited previously, hereafter referred to as N1646).

Applicants respectfully disagree.

Christopoulos describes a transcoding scheme on multimedia data transferred between two network elements. When the multimedia data is an image, Christopoulos transcodes the image based on bitrate, resolution, frame size, color quantization, etc. When the multimedia data is video, Christopoulos transcodes the video based on rate, temporal resolution, motion vector prediction, etc. (Christopoulos, Abstract; paragraphs [0034-0035]). Christopoulos further describes that after a transcoding request is received, the multimedia data is transcoded and sent to a client (Christopoulos, paragraph [0038]).

N1646 describes the JPEG 2000 standard for the format and encoding of a JPEG 2000 compliant codestream. N1646 merely provides the building blocks on which a compliant JPEG 2000 image may be constructed, but does not describe specific image manipulation techniques beyond basic JPEG 2000 image processing.

Amended claim 1 recites:

A system comprising:

a memory storing a compressed image as a codestream in a first JPEG 2000 progression order;

a progression order conversion parser to convert the codestream from the first progression order to a second JPEG 2000 progression order different than the first progression order, without decoding the codestream, by reading one or more markers of the codestream to determine a current type of progression, the one or more markers further indicating one or more data operations to be performed on the codestream during the progression order conversion, updating the one or more markers to specify a target type of progression, and outputting packets of the codestream in an order conforming to the second progression order indicated by the updated one or more markers,

wherein the parser converts the codestream from the first progression order to a predetermined intermediate progression order and from the

predetermined intermediate progression order to the second progression order, and wherein the predetermined intermediate progression order is a layer progression order and the second progression order is a target progression order other than the layer progression order.

(Emphasis Added)

As set forth above, Claim 1 requires a progressive order conversion parser to convert a codestream from one progression order to another, without decoding the codestream, based on information derived from one or more of the markers embedded within the codestream, where the marker(s) also indicate one or more operations being formed on the codestream during the progression order conversion. The progression order is converted from one progression order to a predetermined intermediate progression order and then from the predetermined intermediate progression order to a target progression order. More specifically, the predetermined intermediate progression order is the layer progression order and the target progression order is another one of the progression orders. Applicant respectfully submits that these features are not shown by a combination of Christopoulos and N1646.

Amended claim 1 recites in part “the parser converts the codestream from the first progression order to a predetermined intermediate progression order and from the predetermined intermediate progression order to the second progression order.”

Christopoulos describes that that after a transcoding request is received, the multimedia data is transcoded and sent to a client (Christopoulos, paragraph [0038]). However, nothing in Christopoulos describes or hints that an intermediate transcoded form of multimedia data is utilized by the transcoder of Christopoulos. The Examiner notes that N1646 describes the progression orders for JPEG 2000 codestreams (Office Action, mailed

3/17/08, pages 3-4). Although N1646 describes how codestreams are arranged when in different progression orders, N1646 is completely silent as to converting between progression orders. The JPEG 2000 standard in Section B.12 only specifies how packets of compressed data are arranged for a given progression order, but fails to provide any details as to how conversion from one progression order to another progression order is achieved. Furthermore, because the claimed intermediate progression order is predetermined, the number of conversion paths between an initial progression order and a target progression order is simplified (See e.g., Specification, paragraph 0097). There is simply nothing in the combination of Christopoulos or N1646 that describes or suggests the utilization of an intermediate progression order when transcoding data from a first progression order to second progression order, or that the intermediate progression order is a predetermined progression order.

Furthermore, the Applicants claim in part that the progression order conversion is accomplished “without decoding the codestream.” Since N1646 only offers codestream formatting information, N1646 is silent as to performing image progression order conversion whether or not a JPEG 2000 codestream is decoded. The Examiner therefore relies on Christopoulos at paragraphs 0040-0042 where Christopoulos describes modifying the scaling of a JPEG 2000 image. However, as recited in Christopoulos at paragraph 0043:

[0043] A scaling based method in accordance with JPEG2000 can be implemented by initially calculating the wavelet transform. If a region of interest is selected, a region of interest mask is derived which indicates the set of coefficients that are required for up to lossless region of interest reconstruction. Next, the wavelet coefficients are quantized. The coefficients outside of the region of interest mask are downscaled by a specified scaling value. The resulting coefficients are encoded

progressively with the most significant bit planes. The scaling value assigned to the region of interest and the coordinates of the region of interest are added to the bitstream so that the decoder also performs the region of interest mask generation and the scaling up of the downsampled coefficients.

(Emphasis Added)

That is, once scaling modifications to a JPEG 2000 codestream are complete, the codestream must be encoded. Logically, the codestream must be in a raw or decoded form before the scaling modifications are encoded into the new codestream (See also Christopoulos, paragraph [0049]). Therefore, Christopoulos must also fail to describe transcoding multimedia data “without decoding the codestream,” as claimed.

Therefore, Applicants respectfully submit that independent claim 1, and the claims that depend therefrom, are not rendered obvious by a combination of Christopoulos in view of N1646. Independent claims 10, 19, and 20, and the claims that depend therefrom, include similar limitations and features, and are therefore similarly not rendered obvious by a combination of Christopoulos in view of N1646.

With respect to Claim 5, the present invention as claimed sets forth that the parser determines where packets exist in the codestream based on at least one marker, creates a structure specifying component in each packet, and reorders packets in the codestream using the structure to map the first the progression to the second progression order. The Examiner believes this is shown in sections B.11.1 and pages 68-69 of N1646. Applicant respectfully disagrees. Section B.11.1 sets forth the five permissible progression orders. There is no discussion of reordering

the progression orders at all in this section. It is silent with respect to reordering. Furthermore, there is no structure specifying components in each packet that is used to reorder the packets when mapping one progression order to another progression order. Again, the section merely discloses the five permissible JPEG 2000 progression orders. In view of this, Applicant respectfully submits that Claim 5 is not obvious in view of the combination of Christopoulos and N1646.

With respect to Claims 26 and 33, the present invention as claimed sets forth that the operations specified in the markers operate based on rate distortion information provided in PLT/PPM and PPT/PPM marker sets. The Examiner believes this is shown in the JPEG 2000 spec and references pages 45-48 in N1646. However, the section referenced by the Examiner is merely a discussion of PLT/PPM and PPT/PPM marker sets and their definitions. Both sections of N1646 do not disclose anything about progression order conversions, nor the use of information in those particular marker sets to control progression order conversions. Rather the cited sections of N1646 merely describe the values for markers, lengths of the associated markers, and when the markers can appear in a JPEG 2000 codestream. In view of this, Applicant respectfully submits that the present invention is not obvious in view of Christopoulos and N1646

Therefore, Applicants respectfully submit that the rejection of claims 1, 3-8, 10, 12-17, 19-21, 23, 25-28, 30, and 32-34 under 35 U.S.C. § 103(a) as being unpatentable over Christopoulos have been overcome, and respectfully request withdrawal of the rejections.

Conclusion

Applicants reserve all rights with respect to the applicability of the doctrine of equivalents. Applicants respectfully request that a timely Notice of Allowance be issued in this case. If the Examiner believes a telephone conference would expedite or assist in the allowance of the present application, the Examiner is invited to call the undersigned attorney at (408) 720-8300.

Respectfully submitted,

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Authorization for Extension of Time, All Replies

Authorization is given to treat any concurrent or future reply, requiring a petition for an extension of time under 37 CFR 1.136(a) for its timely submission, as incorporating a petition for extension of time for the appropriate length of time. If any other petition is necessary for consideration of this paper, it is hereby so petitioned. Please charge any shortage in fees in connection with the filing of this paper, including extension of time fees, to Deposit Account 02-2666 and please credit any excess fees to such deposit account.

Respectfully submitted,

BLAKELY SOKOLOFF TAYLOR & ZAFMAN LLP

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